United States Patent Office 3,682,659
Patented Aug. 8, 1972

3,682,659

MARSHMALLOW CONFECTION

Henry E. Jurczak, Chicago, and Edward S. Olney, Deerfield, Ill., assignors to Kraftoo Corporation, New York, N.Y.

No Drawing. Filed Apr. 30, 1970, Ser. No. 33,519
Int. Cl. A23g 3/00
U.S. Cl. 99—134 A 3 Claims

ABSTRACT OF THE DISCLOSURE

Preparing a flowable, spoonable marshmallow mix having 76–80 percent solids and a density of from about 250 to about 425 grams per pint by whipping a syrup of hydrated microcrystalline cellulose, at least one sugar and a whipping agent.

The present invention relates to a whipped confection and more particularly relates to a flowable marshmallow having improved properties and to a method for making same.

Marshmallow is a well-recognized confection which is manufactured by whipping a syrup at temperatures at or above room temperature to produce a light, fluffy, white emulsion of air in the syrup mixture. A whipping agent such as egg albumen may be added to the syrup to aid in providing desired whipping properties. The density (weight per unit volume) of marshmallow is frequently expressed as grams per pint and may range from between about 110 and 230 grams per pint. At the densities of from about 140 to about 150 grams per pint the marshmallow usually has a solid elastic body due to close packing of air cells in the continuous phase. This is the form usually associated by the consumer with the term "marshmallow." As the bulk density is increased, the marshmallow undergoes a change from a solid elastic body through a chewy texture and becomes semi-solid in character. Semi-solid marshmallow products are frequently referred to as "marshmallow creme." Marshmallow cremes have generally been produced with densities of from about 180 to about 230 grams per pint. Marshmallow creme products are generally considerd to have a "spoonable" consistency. By "spoonable" consistency is meant a product with a semi-solid, plastic texture which retains its shape after being removed from a container with a spoon.

Marshmallow creme, upon aging, becomes progressively coarse in texture due to coalescense of air cells. Also, there occurs a syneresis or exudation of liquid from within which causes an appearance of separate liquid phase on the bottom of the marshmallow creme container. This problem becomes more and more acute as the density increases within the above indicated range and as the solids content of the marshmallow is decreased. At the upper level of bulk density in the range, destabilization of the marshmallow creme becomes a problem and the marshmallow creme product separates more rapidly into two phases. Moreover, to produce a flowable marshmallow product, the density of the marshmallow must be greater than about 230 grams per pint. It would be desirable to produce a spoonable marshmallow with lower solids level which is also flowable, but it has been considered difficult to produce such product due to the difficulty of stabilizing a marshmallow product when the density of the marshmallow is above about 230 grams per pint.

Accordingly, an object of the present invention is to provide a spoonable, flowable marshmallow. Another object of the invention is to provide a method for the manufacture of marshmallow which has a density greater than marshmallow available heretofore. Yet another object is to provide a stable marshmallow which has a greater

density and a lower solids level than has been available heretofore and is flowable. Other specific objects and advantages of the invention will be apparent from a careful reading of the following detailed description.

In accordance with the present invention, a stabilizing agent is provided and the stabilizing agent is hydrated by providing an aqueous dispersion of the stabilizing agent. The aqueous dispersion is then formed into a syrup by the addition of sugar and by heating. A whipping agent is then added to the syrup and the resultant mixture is whipped to provide a spoonable, flowable marshmallow product having a density greater than about 250 grams per pint and a solids content of less than about 80 percent. The term "spoonable, flowable" marshmallow product, as used herein, refers to a confection product made with marshmallow materials which may be spooned from a container and which will flow from the spoon. The depression left in the container by the product which is removed will gradually be filled in by flow of the surrounding product. This is distinguishable from the consistency of heretofore known marshmallow creme which does not flow.

The marshmallow product may have a density of from about 250 grams per pint to about 425 grams per pint. As previously indicated, when a marshmallow product is prepared having a density within the above indicated range, there is a tendency for the marshmallow product to destabilize and separate into a liquid phase and a solid phase. This problem is accentuated when the solids content is lowered below about 80 percent. The stabilizing agent of the present invention aids in providing desirable texture in the marshmallow product and stabilizes the marshmallow to prevent separation of liquid therefrom.

The whipping agent may be any conventional whipping agent previously employed in the manufacture of marshmallow. A preferred whipping agent is egg albumen. The egg albumen may be dried or may be from fresh egg white. In the event that dried egg albumen is used, the dried egg albumen is reconstituted with water prior to the addition of the egg albumen to the syrup.

The stabilizing agent of the invention is colloidal cellulose crystallite aggregates, hereinafter sometimes referred to as micro-crystalline cellulose. A suitable method for preparing microcrystalline cellulose is described in U.S. Pat. No. 2,978,446. The stabilizing agent is used at a level sufficient to act as a stabilizer for the flowable marshmallow product. In general, a level of stabilizing agent of from about 0.5 percent to about 5.0 percent by weight of the marshmallow product is sufficient to stabilize the flowable marshmallow product.

Microcrystalline cellulose has a slight negative charge when placed in an aqueous dispersion. Due to the negative charge, small amounts of electrolytes or cationic ions present in the dispersion tend to flocculate the microcrystalline cellulose. Therefore, it is preferred to use deionized water in preparing an aqueous dispersion of the microcrystalline cellulose to prevent flocculation. Flocculation may also be retarded or prevented by using a protective colloid in combination with the microcrystalline cellulose. Suitable protective colloids include, but are not limited to, carboxymethyl cellulose, vegetable gums, such as gum acacia, carob bean gum, gum tragacanth and seaweed gums, such as carrageenin. When used, the protective colloid is present at levels of from about 5 to about 20 percent by weight of the microcrystalline cellulose.

Other stabilizing materials may be used in combination with the stabilizing agent of the invention to provide additional stabilization of the marshmallow product at the upper level of density within the range set forth, i.e., above a density of about 350 grams per pint. In particular, alginate derivatives, such as propylene glycol alginate and sodium alginate, have been found to be effec-